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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,661	02/11/2005	Masaru Wasaki	122761	1511
25944	7590	11/13/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			GLENN, KIMBERLY E	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/524,661	Applicant(s) WASAKI ET AL.	
	Examiner Kimberly E. Glenn	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-14 is/are allowed.
- 6) ☐ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☒ Claim(s) 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/6/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "the impedance element " in line 24. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, and 4 are rejected under 35 U.S.C. 102 (b) as being anticipated by Boomgaard US Patent 4,903,006 (of record).

Boomgaard disclose a power line communication system comprising a first winding 36 inserted to one of the conductor lines at a specific first point; a second winding 40 that is inserted to the other of the conductor lines at a second point corresponding to the first point and is coupled to the first winding, the second winding suppressing the common mode signals in cooperation with the first winding; a third winding 42 coupled to the first and second windings such that a mutual inductance is

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generated between the third winding and the first and second windings; and a phase-inverted signal transmitting means (30 32 34) connected to the third winding 42 and to the one of the conductor lines at a third point different from the first point, the transmitting means being further connected to the other of the conductor lines at a fourth point corresponding to the third point and different from the second point, the transmitting means transmitting a phase-inverted signal for suppressing the common mode signals.

The power line communication system isolates the electrical noise via a broadband common mode trap 28, which comprises power frequency blocking capacitors 30, 32, 34 and a 1:1 transformer 35. The transformer 35 has a magnetic core 37, a winding for each electrical phase, 36, 38 and 40, and a winding 42 which functions as a capacitor common. Since, all the winding are wrapped around a single core 37, all the winding will be mutual coupled to each other.

Boomgaard further states that while looking at the power line 12 from the side of the noise generator 26, the electrical noise passes through the transformer windings 36, 38 and 40, entering the un-dotted ends of the windings. The impedances of capacitors 30, 32 and 34, while high to power frequency currents, are low across the broad spectrum of high frequencies present in electrical noise. The impedances of capacitors 30, 32 and 34 to electrical noise are also low compared with the impedance 44 of the power line. The electrical noise thus flows through capacitors 30, 32 and 34 and enters the dotted end of winding 42. The electrical noise through winding 42, being in the opposite sense to the electrical noise flowing into the un-dotted ends of windings 36, 38

and 40, makes transformer 35 function as a bifilar wound coil, reducing the inductance of transformer 35 to the flow of the electrical noise to near zero. Thus, capacitors 30, 32 and 34 along with winding 42 provide a very low impedance path to ground for the electrical noise. The connection 48 to ground should be made near the noise generator so that there is very little impedance in the ground path back to the noise generator 26, precluding pumping the noise back into the power line 12.

Looking at the power line 12 from the side of the radio frequency generator 14, the communication signals all flow through transformer 35 in the same direction, i.e., into the dotted ends of windings 36, 38, 40 and 42, and thus transformer 35 presents a high inductance to the radio frequency signals, and a high impedance to ground.

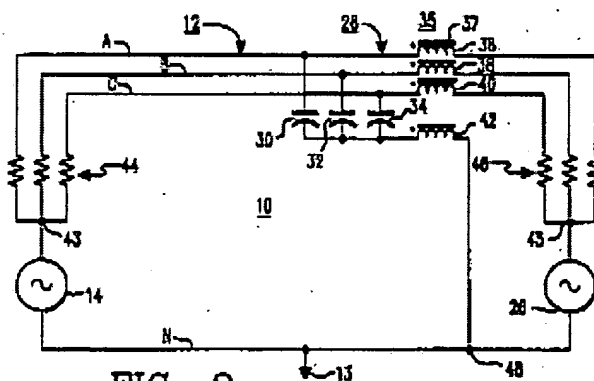


FIG. 2

Allowable Subject Matter

Claims 2 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 8-14 are allowed.

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The following is a statement of reasons for the indication of allowable subject matter: With regards to claims 8-14, the prior art of record does not disclose or fairly teach an impedance element provided on the one of the conductor lines at a point between the first and second points, the impedance element reducing a peak value of a normal mode signal passing there through.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Takagia et al US Patent 4,910,482 discloses an ac line filter comprising of a pair of input terminals and a pair of output terminals; a main core for forming a closed magnetic path, at least one auxiliary core for forming a closed magnetic path shorter than that of said main core, opposing portions of said auxiliary core being disposed respectively beside said main core, said auxiliary core having an effective permeability at a low frequency region higher than that of the main core; and a pair of windings which are provided at opposing locations on said main core and which are wound in an opposite direction to each other, one of said pair of windings being connected between one of said pair of input terminals and one of said output terminals, the other of said pair windings being connected between the other of said input terminals and the other of said output terminals; wherein a winding portion of each of said pair of windings is provided to surround both said main core and said auxiliary core simultaneously and said winding portion is more concentrated than the rest of said winding.

Okochi US patent 7,667,173 discloses a line filter circuit for attenuating both normal and common mode noise currents in a power line having at least a pair of conductors connecting a source of electricity to an electronic device, said filter circuit comprising: first and second reactor means each including a magnetic core having a pair of windings thereon, each winding of said pair being wound to cancel the magnetic flux in the other of said pair, said one winding of each of said pair of said first and second reactor means being connected in series with each other and in series with one of said pair of conductors; said second reactor means being connected between said first reactor means and the electronic device; said first reactor means having an inductance of a selected value for attenuating frequencies in a high range; said second reactor means having an inductance of a selected value larger than the selected value of said first reactor means for attenuating frequencies in a range lower than said first reactor means; first capacitor means having one side connected to one of said conductors and the other side connected to the other of said conductors, operative to cooperate with said first and second reactor means for attenuating normal mode currents; second

capacitive means including a plurality of capacitors each having one side connected in common to ground and the other side connected to a respective one of said conductors between the windings of said second reactor means and the input of the electronic device, operative to cooperate with said first and second reactor means for attenuating common mode currents.

Hutchison US Patent 5,969,583 disclose a common mode EMI filter with a separately wound ground winding comprising at least two power conductors, wherein each power conductor has an input for electrical coupling to a power outlet, and each power conductor has an output; a ground conductor; a core onto which the at least two power conductors and ground conductor are separately wound to form windings of a common-mode choke, when the windings of the ground conductor are circumferentially separated around the core from the windings of the at least two power conductors, the outputs of the power conductors for providing a power signal with reduced common-mode noise.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E. Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

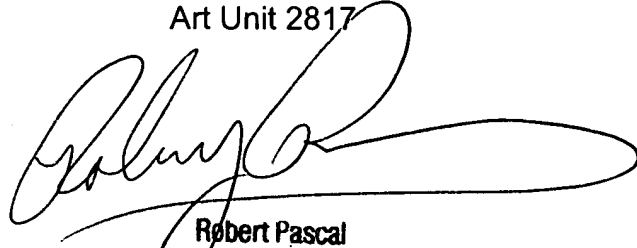
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Kimberly E Glenn
Examiner
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A handwritten signature in black ink, appearing to read 'Robert Pascal', with a large, sweeping horizontal stroke extending to the right.

Robert Pascal
Supervisory Patent Examiner
Technology Center 2800